(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

### (19) World Intellectual Property **Organization**

International Bureau



# 10/519346

(43) International Publication Date 31 December 2003 (31.12.2003)

PCT

(10) International Publication Number WO 2004/001568 A3

- (51) International Patent Classification7: G01R 31/3185
- (21) International Application Number:

PCT/IB2003/002380

- (22) International Filing Date: 19 June 2003 (19.06.2003)
- (25) Filing Language:

**English** 

(26) Publication Language:

English

(30) Priority Data: 0214516.7

GB 21 June 2002 (21.06.2002)

- (71) Applicant (for all designated States except US): MELEXIS NV [BE/BE]; Microelectronic Integrated Systems, Rozendaalstraat 12, B-8900 Ieper (BE).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): DE WINTER, Rudi [BE/BE]; Corbiestraat 9, B-3550 Heusden-Zolder (BE).
- (74) Agent: HILL, Richard; Wilson Gunn Skerrett, Charles Street, 148/9 Great Charles Street, Birmingham B3 3HT (GB).

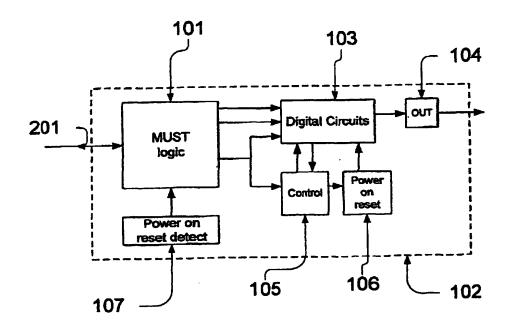
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: SINGLE PIN MULTILEVEL INTEGRATED CIRCUIT TEST INTERFACE



(57) Abstract: An integrated circuit (102) comprises one or more integrated circuit elements which may interact with other circuitry via one or more input/output pins. In the present invention the circuit elements include and interface element (101) for interfacing with external test circuitry. The interface element communicates with the external test circuitry via a single input/output pin (201) dedicated for testing.



(88) Date of publication of the international search report: 18 March 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

## INTERNATIONAL SEARCH REPORT

ir ional Application No PCT. 03/02380

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G01R31/3185

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

 $\begin{array}{ll} \mbox{Minimum documentation searched} & \mbox{(classification system followed by classification symbols)} \\ \mbox{IPC 7} & \mbox{G01R} & \mbox{G06F} & \mbox{H03K} \\ \end{array}$ 

Documentation searched other than minimum documentation to the extent that such documents are included. In the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	US 4 449 065 A (DAVIES JR THOMAS J) 15 May 1984 (1984-05-15) column 1, line 61 - line 64; figures 1,3	1,2,4
X	PATENT ABSTRACTS OF JAPAN vol. 006, no. 230 (E-142), 16 November 1982 (1982-11-16) -& JP 57 133656 A (NIPPON DENKI KK), 18 August 1982 (1982-08-18) abstract	1-3,5
X	PATENT ABSTRACTS OF JAPAN vol. 016, no. 516 (P-1443), 23 October 1992 (1992-10-23) -& JP 04 191683 A (MITSUBISHI ELECTRIC CORP), 9 July 1992 (1992-07-09) abstract	1,2

Y Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filing date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "&" document member of the same patent family
Date of the actual completion of the international search  15 January 2004	Date of mailing of the international search report  23/01/2004
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL – 2280 HV Rijswijk  Tel. (+31–70) 340–2040, Tx. 31 651 epo nl,  Fax: (+31–70) 340–3016	Authorized officer Hijazi, A

## INTERNATIONAL SEARCH REPORT

In: onal Application No
PCT 03/02380

		PCTI 03/02380								
C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT										
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.								
A	EP 0 352 937 A (IBM) 31 January 1990 (1990-01-31) column 12, line 1 -column 13, line 29; claims 2-6	1								
A	Claims 2-6  US 2002/053926 A1 (YAGISHITA YOSHIMASA ET AL) 9 May 2002 (2002-05-09) page 1, paragraph 8 -page 2, paragraph 19; figures 1-3									

# INTERNATIONAL SEARCH REPORT

n patent family members

PCT/1b 03/02380

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 4449065	A	15-05-1984	CA EP JP JP JP	1196393 A1 0076734 A2 1719318 C 3080373 B 58071732 A	05-11-1985 13-04-1983 14-12-1992 24-12-1991 28-04-1983
JP 57133656	Α	18-08-1982	NONE		
JP 04191683	Α	09-07-1992	NONE		
EP 0352937	A	31-01-1990	US DE EP JP JP JP	4961192 A 68926412 D1 0352937 A2 1920798 C 3109646 A 6050472 B 5122688 A	02-10-1990 13-06-1996 31-01-1990 07-04-1995 09-05-1991 29-06-1994 16-06-1992
US 2002053926	A1	09-05-2002	JP US US	2002152029 A 2002175708 A1 2002158667 A1	24-05-2002 28-11-2002 31-10-2002